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ORIGINAL LECTURES.

ENUCLEATION OF GOITRE.

A Clinical Lecture
delivered at the Jefferson Medical College Hospital,
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GENTLEMEN: I shall show you to-day a case of goitre in a woman with the following history: She is thirty years of age, an American by birth. Six years ago she noticed that breathing after exertion became difficult, and three months later she discovered a slight swelling in the neck. This swelling has increased in size only gradually, except for two or three months after each of her two labors, when the increase was quite rapid. This statement is in consonance with the fact that in many women there is increased fulness of the thyroid gland after maternity. The tumor is not painful. The urine is straw-colored and contains a doubtful trace of sugar, some pavement epithelium, but no albumin.

The following measurements have been taken: Circumference of the neck 16¼ inches. The horizontal arc of the tumor, from side to side, is 7¾ inches, subtending a chord of 4¼ inches. The horizontal arc from the middle line to the right border is 4½ inches; from the middle line to the left border 3¼ inches. The vertical arc is 6 inches; its chord 3¼ inches. The tumor feels distinctly cystic and resilient, but it is not markedly lobulated. The larynx has been examined by Dr. Jones and the vocal cords found to be normal, and there is no paralysis. I should add that it is through the courtesy of Dr. Hearn that I have the opportunity of showing you this patient.

There are three kinds of goitre: First, we have exophthalmic goitre, which heretofore has been a non-surgical affection, and is accompanied with enlargement of the heart, rapid pulse and protuberance of the eyeballs. This form has been successfully operated on recently, but the number of cases is too small to generalize from. Second, we have parenchymatous goitre, in which the gland tissue proper of the organ is involved. This makes a hard dense fibrous structure. Third, we have the form which I think is present in this case—a cystic goitre, which is really a fibro-adenoma with one or more cysts. In addition to these goitres, properly so called, we have the various cancerous enlargements of the gland, which are necessarily more serious than those which I have mentioned.

The diagnosis of goitre is usually easily made, but the variety is not always so readily determined before operation.

The medical treatment of goitre is unsatisfactory. Sorbefacient and irritant ointments and internal remedies have given practically but little result. In the surgical treatment of this affection several methods have been employed. The first method that I shall allude to is that of injection, either of the ordinary tincture of iodine, or as proposed by Sir Morell Mackenzie, of the tincture of the chloride of iron, the object being to convert the enlargement into an abscess. I do not believe in either of these methods, especially since the splendid results of operations which have been reported by Socin and others. In the light of these reports, I think that it is useless to talk of the injection of any fluid into these tumors. It is a procedure attended with danger of septic infection, and is painful, tedious, and uncertain in its results.

Of operative procedures proper, there are three. The first is evacuation. In some cases, especially of large immovable masses, this will do a great deal of good. It consists in opening the various loculi, whether cystic or solid, and peeling out their contents. The second method, and the one which I shall try in this case, is enucleation. It consists in cutting down to the cyst itself and enucleating it as we would any other cystic growth. This method has been advocated especially by Socin, of Switzerland, and his cases have been reported by Keser, his assistant. The third method is extirpation, which is the most dangerous of all, both as concerns its immediate and subsequent results. In 1871 Dr. Green, of Portland, Maine, reported six cases of this kind, and it surprised the surgical world that he was able to report so many. Since that time, and more especially in the last few years, a revolution has taken place in the surgery of the thyroid gland. Billroth has reported a large number of cases in which he has had remarkable results. It has remained for Kocher, of Switzerland, to give the most extraordinary figures. In a paper published in the *Correspondenzblatt für Schweizer Aerzte*, January, 1889, he reports 250 cases of extirpation. His results are astonishing. Of the 250 cases 25 were cases of cancer. Of this number 4 died, a mortality of 17 per cent. Of the remaining 225 non-cancerous cases, 223 recovered and only 2 died, a mortality of only 0.8 per cent. Socin in 59 cases of evacuation and enucleation had only one death. This occurred a short time after operation and was due to hæmorrhage. You can imagine how great the hæmorrhage was, when I tell you that during the operation 170 ligatures were employed. Years ago I saw a case of goitre operated on in this city in which the hæmorrhage was enormous, and the patient died three days afterward.

I have here some drawings from Kocher's paper published in Langenbeck's *Archiv* for 1880. The incision which he recommends in extirpation is an angular one, vertical in the median line and then extending outward over the larger portion of the growth. If necessary, this can be converted into a Y-shaped incision by an oblique cut on the opposite side. In operating it is the veins which give by far the greatest trouble. In this first in-

cision the external jugular will probably not be interfered with, but the anterior jugular, another vein called by Kocher the oblique jugular, and the anterior communicating branch will be cut. These are to be tied with double ligatures and the vein divided between them. We next come to the deeper vessels. We have a superior communicating vein going from the superior thyroid vein of one side to that of the other. There is also a deep anterior communication connecting the deep thyroid veins of each side. There is not only a superior thyroid, but also an accessory superior thyroid. In the same way there is an inferior thyroid and an accessory inferior thyroid. Then we have, what is very common, a still lower thyroid vein, the vena thyroidea ima, with an accessory vein to it. These veins are to be divided methodically. The order in which the three superficial veins are tied makes little difference. The fourth vessel to be tied is the superior thyroid; fifth, the accessory superior thyroid; sixth, the superior communicating; seventh, the thyroidea ima; eighth, its accessory; ninth, the inferior thyroid; tenth, its accessory; and eleventh, the inferior communicating.

But there are also arteries as well as veins which require attention. It is principally at the inferior thyroid that trouble is apt to be met with. This is because of its relation with the recurrent laryngeal nerve. The inferior thyroid, as you know, arises from the thyroid axis, goes behind the carotid and the sympathetic nerve, having in front of it the superior ganglion of the sympathetic, from which goes the cardiac nerve. The artery then goes behind the recurrent laryngeal nerve and passing under the tumor toward the middle line, finally plunges into the gland. In tying this artery there is danger of wounding the sympathetic or the recurrent laryngeal nerves. If the latter is destroyed it produces paralysis of the vocal cord of that side, but does not necessitate tracheotomy. If both are injured it becomes necessary to do tracheotomy, as the glottis closes.

The only way to avoid this injury to the nerve is *to isolate absolutely* the vessel before it is tied. In goitre this artery not seldom becomes as large as the carotid.

Another difficulty is that the recurrent laryngeal nerve is very tightly adherent to the gland on its posterior surface in the groove between the œsophagus and trachea. If the gland is drawn over to one side, the nerve may be pulled into a loop and injured, causing paralysis of the vocal cord. It is important to keep close to the tumor at this point.

I have here some statistics taken from Keser's paper, published in 1887. The number of cases operated on was 59. Of these, 5 underwent total extirpation, 17 partial extirpation and 37 enucleation. It was found that in 9 of the partial extirpations, enucleation could have been performed. The ages of the 59 patients varied between twelve and seventy years. There was only one death. In 11 partial extirpations, the histories of which were followed, there was return in 5. In 21 enucleations there was return in only 3.

The dangers of extirpation are immediate (as from hæmorrhage) and remote. The remote dangers are important. These dangers have been explained by the experiments of Horsley. In cases of atrophy or destruction of the thyroid gland its function is, of course, abolished. The function of this gland seems to be a two-fold one. It presides in some obscure way over the nutrition of the mucous tissues of the body, and in the second place it largely controls the genesis of the blood. The complete extirpation of the gland is liable to be followed by great anæmia and a condition which is called myxœdema or cachexia strumipriva. In this curious condition the body becomes bloated, the eyelids hang in folds, the face is like that of a person dropsical from Bright's disease, but the exudation is not soft but hard, and results from the development of mucous tissue. After a time, the hair drops out and mental changes occur, finally resulting in crétinism. This is often seen in Switzerland in connection with goitre. In these cases the speech is slow and faulty, mental operations become sluggish, albumin appears in the urine, and finally death closes the scene. Another curious occasional result is that peculiar muscular tremor known as tetany. Myxœdema and tetany are not apt to occur in those cases in which a portion of the gland is allowed to remain. This fact has led to enucleation of the goitre in preference to extirpation of the whole gland, and lately to the recommendation by some that a part of the gland should be transplanted. This has been suggested by Schiff and Kocher, and has recently received the approval of Horsley. The operation consists in taking a part of the normal thyroid gland of some animal, as a sheep, and transplanting it into some part of the body before operation, as, for instance, into the abdominal cavity. The results of these operations have not yet been published, but, as I have stated, they have received the approval of so able a surgeon and experimenter as Horsley, which is a great point in their favor.

In this case I propose, if possible, to do enucleation and not extirpation. In enucleation we avoid two of the dangers of extirpation, the immediate danger of injury to the recurrent laryngeal nerve and the remote danger of myxœdema or tetany. Here a large portion of the left lobe appears to be in good condition, and I shall try to preserve it.

In some cases it is necessary to do tracheotomy, but always avoid it if possible, for the moment you open the trachea you have a septic wound, as all the air entering and passing from the lungs passes over the wound.

You observe the peculiar breathing which the patient shows, and also the fact that she does not take ether well. I first make my incision through the skin and ligate all the veins that appear. The layer of gland tissue which overlies the cyst in these cases may be very thin or it may be as thick as one-half or three-fourths of an inch. I shall cut through this tissue until I reach the cyst. I now come to what I think is the cyst wall. I ligate the veins that appear on its surface, tying every vessel that would be apt to bleed. I now find, however, that it is not the cyst wall, but glandular tissue, almost one-fourth of an inch of which I must cut through before I reach the cyst. On opening this, a quantity of dark-colored fluid is discharged. It is easily seen by those who are near that the cyst-wall can be readily distinguished from the gland tissue. The cyst, as you see, is separated and removed without difficulty, with but little bleeding. There is quite free hæmorrhage from one rather large vessel at the bottom of the cavity, but this is now controlled after some little trouble. I shall not close the wound until satisfied that every bleeding vessel

is tied. The number of ligatures used by Socin varied between twenty-four and sixty. In this case I have used thirty-seven. I have not at all interfered with the left lobe of the gland, which, however, is only slightly enlarged. As there is no further bleeding I apply deep catgut sutures to bring together first the cyst wall, then the muscles, and lastly the skin, by superficial sutures of silk, inserting a rubber drainage-tube and also a bundle of horsehair. The wound is then dressed in the ordinary manner.

NOTE.—The patient had had a troublesome cough for some days before the operation. This was very markedly increased immediately after the operation. She was also uncontrollably restless, and so displaced the dressing that the wound was exposed and became infected within twenty-four hours; moderate suppuration and considerable fever followed, the temperature rising to 104.2°. For six days she was seriously ill. The sutures in the vertical incision were removed, the wound washed out with bichloride solution and ample drainage secured. Alcohol was freely given. She then began to improve; in ten days the temperature became normal, and she left the hospital, after three weeks, entirely recovered.

ORIGINAL ARTICLES.

SUPRA-VAGINAL HYSTERECTOMY.

Hysteromyomectomy with Suspension of the Stump in the Lower Angle of the Abdominal Incision.

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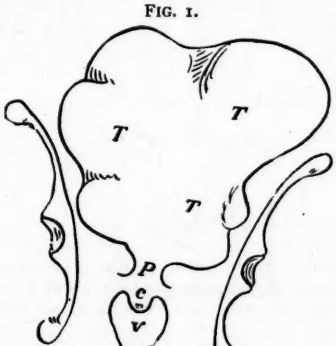
THE method here proposed[1] is limited to cases conceded to be most favorable for operation—those in which there naturally exists a pedicle, or in which it is possible to form a pedicle below the tumor masses. I do not wish to consider atypical cases, in which total ablation of the uterus (panhysterectomy) is called for, or those in which the uterus

FIG. 1.

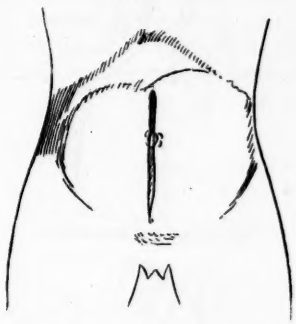


T T T, tumor. *P*, pedicle. *V*, vagina in section.

from fundus to cervix is a mass of fibroid tumors. I also purposely avoid the important question as to the best method of forming a pedicle when the broad ligament is choked with fibroid tumors. Fig. 1 is a generic representation of the class under discussion.

I have adopted in these cases an original method combining the advantages and eliminating many of the dangers of Hegar's and Schröder's methods—the ordinary extra- and intra-peritoneal methods.

FIG. 2.



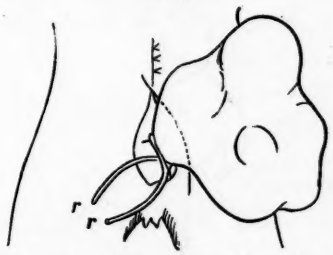
The operation consists of seven steps, as follows:

First. A long incision in the linea alba (Fig. 2) for the delivery of the myomatous uterus.

Second. The elevation of the tumor until the pedicle is brought into view for treatment by tying the broad ligament structures, or for enucleation of tumors from the broad ligament until a pedicle is formed, when the rubber ligature is applied and tied tightly, controlling the circulation. (Fig. 3.)

Third. The tumor is cut away from one to two inches above the rubber ligature (Fig. 4), by first

FIG. 3.



Tumor delivered. *r r*, rubber ligature in place and ready to be drawn tight. Dotted line shows the incision through the peritoneum.

splitting the peritoneum and then cupping out the upper face of the stump, cutting with each stroke down toward the vaginal canal.

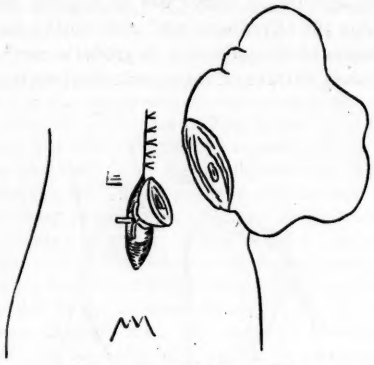
The cervical canal must next be carefully dissected out and its site well cauterized.

Fourth. This consists in the closure of the raw face of the stump by uniting the opposite sides by means of a continuous buried suture of catgut as seen in Figs. 5 and 6. Fig. 5 represents the appearance

[1] See American Journal of Obstetrics, April, 1889.

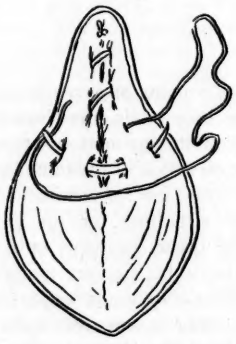
seen upon looking down on the stump from above, Fig. 6 being a vertical section through the cervix.

FIG. 4.



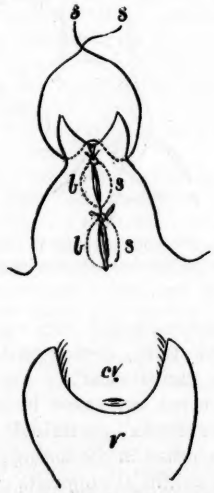
Tumor separated from pedicle.

FIG. 5.



Method of closing upper raw surface of stump by means of a continuous buried suture.

FIG. 6.

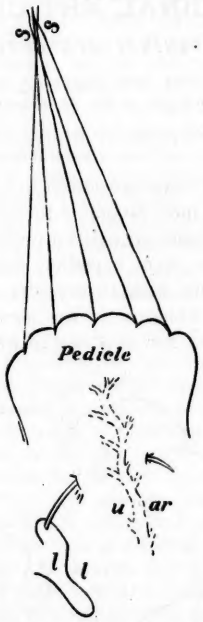


Stump united up to last row of interrupted surface-sutures, *S S*. *b s*, last rows of buried sutures. *V*, vagina. *c v*, vaginal cervix.

The last row of sutures, which brings the peritoneal surfaces into apposition, is of interrupted silk sutures, with the long ends left uncut, for a purpose to be described later. All of these sutures, buried and superficial, must be applied with the view of controlling the circulation as well as securing approximation. They must, therefore, be drawn tight, and must encircle any vessels in view.

Fifth. After the surface of the stump has thus been closed and there remains nothing of the wound but the linear union of the peritoneal surfaces, the rubber ligature is cut away, and the lips of the wound are carefully observed. If there is any persistent oozing the nearest uterine artery must be ligated. This is accomplished by grasping the long ligatures and pulling the stump to the right or left, exposing the site of the left or right artery. A stout needle armed with a catgut ligature is then swept boldly through the side of the stump, well below the sutured area (Fig. 7) and tied, thus cut-

FIG. 7.



Ligation of left uterine artery. Pedicle is pulled toward the right by means of the long interrupted silk sutures *S S*, while the needle carrying ligature is passed under the uterine artery.

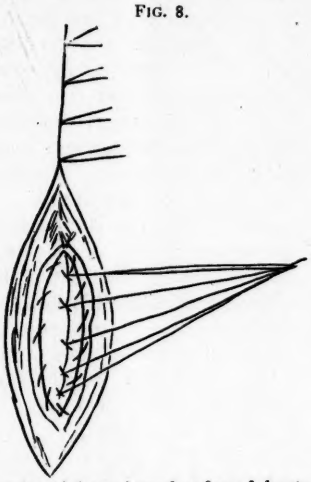
ting off all communication between the artery and the stump.

Both arteries may be treated in this way without any danger of destroying the vitality of the stump. If, however, there should be no flow of blood from the closed lips of the stump, the fifth step may be omitted.

Sixth. The abdominal incision is closed down to

the stump, putting in a drainage-tube, if needed, well above the stump. Following this the parietal peritoneum of the abdominal incision is united to the peritoneal coat of the stump, below the lips of the stump, by means of a continuous catgut or silk ligature (Fig. 8); and in this way the stump is separated from the peritoneal cavity.

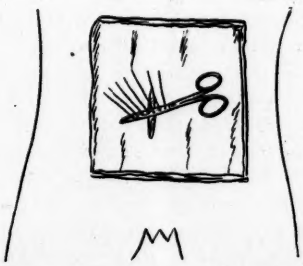
FIG. 8.



Showing union of the peritoneal surface of the stump to the parietal peritoneum.

Seventh. The wound is dressed with some dry antiseptic powder, or simply packed under the edges of the skin, around the suspended stump, with antiseptic gauze. Finally, a large square of gauze, six or eight folds in thickness, with a small slit in it, is prepared, and the long ligatures which unite the peritoneal lips of the stump are pulled through the slit. These are lifted well up, and grasped by a pair of long Keith's forceps laid horizontally on the body (Fig. 9).

FIG. 9.



Dressing applied. Interrupted sutures of the surface of stump are brought through a hole in the gauze and grasped by forceps.

This dressing serves effectually to keep the stump from pulling back into the abdomen, and the operator has at all times full control of it at a moment's notice in case of accident. This gauze can be changed as often as soiled. Once every two or three days is usually sufficient. The silk sutures uniting the peritoneal lips of the wound finally either come away or are cut loose and pulled out in about ten days.

The small pit which is thus left in the lower angle of the abdominal wound over the stump rapidly fills by granulation.

This method has distinct advantages over internal or external methods commonly in use. It is better than dropping the stump back among the intestines (Fig. 10). By the new method hæmorrhage is not

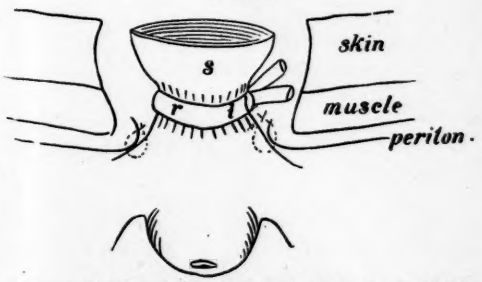
FIG. 10.

Intra-peritoneal treatment. Stump *S* dropped back into peritoneal cavity and abdominal walls closed above.

dangerous, being at all times under control. The danger of sepsis is also removed, a danger to which large numbers of cases have succumbed after the intra-peritoneal treatment of the stump.

It is better than the common external method (Fig. 11), because, in the first place, it is there

FIG. 11.



Extra-peritoneal treatment of stump *S*, which sloughs off at the rubber ligature *r l*. The union of the peritoneum of the stump to that of the abdominal walls is shown by the dotted circles.

necessary to elevate even a short pedicle far enough to attach the parietal peritoneum *below the rubber ligature*. By my method the attachment is higher, and the method is, therefore, better for short pedicles, doing away with a traction which is often excessive.

Again, when the rubber ligature is left on, it is impossible to limit the depth of the slough which takes place as the distal end drops off, and it will readily be granted on general principles that a method which constricts any part of the body, and waits for it to drop off by sloughing is a coarse and unscientific means of performing an amputation.

THE PROPRIETY OF THE REMOVAL OF THE APPENDIX VERMIFORMIS DURING THE INTERVALS OF RECURRENT ATTACKS OF APPENDICITIS.[1]

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THE question propounded in the title of this paper is a new one in surgery. Its solution cannot be made at once. The entire subject must first be considered in the light of aseptic surgery, and, having discussed the question from that point of view, the operation must be examined into as to its propriety in certain cases. A definite answer must be postponed until new data and recent clinical experience have afforded us more reliable information from which to judge the expediency of such an important surgical procedure. The propriety of excision of the appendix can be discussed, however, from a theoretical point of view, and reference can also be made to the few reported cases, and from such data some knowledge can be obtained which will at least throw light upon this hitherto unexplored field of operative surgery. The entire subject of iliac inflammations is fraught with great interest from many points of view. However attractive these inflammations may appear, the discussion in this paper is restricted to one single question in regard to the whole subject, and that is, Is the surgeon justified in excising the appendix after recovery from one or many attacks? The question of removal of the appendix during an interval of quiescence cannot be answered dogmatically. I shall endeavor to demonstrate that the operation as routine treatment in all recurrent cases is unsurgical, and that only in rare cases is it indicated.

With the view to simplifying the subject it seems pertinent to classify these inflammatory attacks; because all inflammations in this region are not identical, either in etiology, in the anatomical part involved, or in the termination.

The opinion has recently been advanced that all of these conditions are dependent upon a primary pathological change in the appendix, and that all the subsequent changes are secondary to an affection of the appendix. For my own part I cannot endorse this view. I have observed many cases that certainly ran a course very similar to typical appendicitis, and yet the cæcum or the pericæcal region were the parts involved, and the appendix was normal. I shall have occasion to refer again to these cases. If the view is accepted that all these changes are secondary to a primary appendicitis, then certainly it must be admitted that this one region forms an exception to the laws governing inflammations in other parts. This belief would imply that there is a part or section of the alimentary canal that enjoys an immunity from primary inflammatory changes, and that there is a limited area of connective tissue in the right iliac region which is free from initial inflammations, and that there is a restricted zone of peritoneum exempt from a peritonitis except as secondary to an appendicitis. Surely this view is not tenable, and clinical experience clearly points to the conclusion that there is no exception here to the laws governing inflammations in general; but that each part, and every structure, and all varieties of tissue may become the seat of an inflammation independent of an appendicitis. To refer now to a classification of these inflammations. They may, for convenience, be divided into—

1. Typhlitis.
1. Perityphlitis.
3. Appendicitis.
4. Peri-appendicitis.

These different inflammations may merge into one another if no surgical treatment intervenes; but the separate conditions may exist independently, and each may run its course without necessarily involving the other. By a typhlitis is meant an acute or subacute inflammation of one of the several coats of the cæcum. This form may possibly extend to the adjacent tissues. The lesion consists of a catarrhal or ulcerative inflammation, and begins in the mucous membrane. This variety of inflammation is dependent upon fæcal impaction, a septic diarrhœa, a corrosive poison, or an ulcerative process.

There are some surgeons who deny the existence of a localized inflammation of the cæcum. I am confident that I have seen several cases of this kind. The proof of this statement becomes apparent by an examination of two specimens which I have, showing well-marked ulceration of the mucous membrane of the cæcum, and these changes are entirely independent of any trouble with the appendix. Dr. Janeway informs me that he has recently seen three cases of localized cæcal inflammation. These cases certainly establish the clinical fact which is denied by some surgeons, that a local inflammation in the right iliac region can exist independent of appendicitis.

The case reported by Mr. Pepper, of London, is another proof of local cæcal inflammation. The vaginal injection of a 1 : 2000 bichloride of mer-

[1] Read before the American Surgical Association, May 14, 1890.

cury solution caused extensive ulceration of the cæcum. The patient died, and the autopsy revealed the fact that the ulceration was limited to the cæcum.

Toxic enteritis may chiefly, if not entirely, involve the cæcum, and after the administration of antimony as well as of arsenic this phenomenon has followed. I have cured a case of extensive ulceration, of eleven years' standing, of the cæcum and ascending colon, by copious injection high into the colon, using as strong a solution of bichloride as the circumstances permitted. After eleven years of septic diarrhœa and hæmorrhage this patient was entirely cured of his cæcal and colon ulceration.

The second variety, viz., perityphlitis, is that form of inflammation which involves the areolar tissue in the vicinity of the cæcum. This leads to suppuration and may exist independent of any change in the appendix. These cases are observed following traumatism, as in sprains of the psoas muscle, or from some pathological condition in the ilium, sacrum, or vertebræ. I have seen these cases occur after violent athletic exercise; one case occurred after swimming, a second after jumping, and a third after lifting heavy weights. These abscesses go on to free suppuration, are situated in a kind of tissue prone to break down after an injury, are not subject to perforation, but generally point toward the periphery of the body.

The third variety, appendicitis, means an inflammation of the vermiform appendix, and is identical with a typical typhlitis, only that it is more serious in its consequences, owing to the anatomical formation of the part; but the causes which give origin to the change are, in many respects, similar.

The fourth variety, viz., peri-appendicitis, is not so clearly defined as is perityphlitis, because this variety is undoubtedly secondary to an appendicitis. The small amount of areolar tissue about the tip of the appendix is not exposed to the same injuries as the more abundant quantity about the cæcum.

The question of removing the appendix during the quiescent period would therefore involve the last two conditions, viz., an appendicitis or a peri-appendicitis.

It is, then, with an appendicitis or a peri-appendicitis that this question of removal of the organ during an interval of attack concerns us at the present time.

In discussing the operation the first question that naturally arises is, What proportion of cases of appendicitis are recurrent? It is with this percentage of cases that the question of removal of the appendix arises. There are no definite statistics upon this most important point. Fitz, in his scholarly article, has found in the examination of 257 cases of appendicitis that 28 of the cases were recurrent. This would place the number at about 11 per cent. In other words, 89 per cent. of the cases of appendicitis are solitary and 11 per cent. are multiple. The proportion is about the same in regard to typhlitis and perityphlitis as regards solitary and multiple attacks.

A second question now arises, viz., In the 11 per cent. of cases in which a relapse occurs, what is the termination? If all the 11 per cent. of cases of relapsing appendicitis terminated fatally then the question of excision of the appendix is easy to answer. It is obvious that if all these patients died during one of the recurrent attacks excision of the appendix should be attempted after the first or second attack; because the removal of the appendix would be the only salvation open to these unfortunate individuals. Happily death is not the only termination for this 11 per cent. of cases.

They may terminate in:

1. Resolution.
2. Formation of pus and evacuation of abscess.
3. Perforation and general peritonitis.

It is not known how many of these cases of relapsing appendicitis terminate in resolution. Unfortunately there are no statistics upon this point.

Nearly all of the authorities, however, are in accord with the general statement that a majority of the cases undergo resolution, and that only exceptionally perforation occurs.

The second way in which an appendicitis may terminate is by the formation of pus and the evacuation of the abscess, either spontaneously or by surgical interference. In regard to the chances of recovery offered by an early operation, it has been shown that there are fifty per cent. more recoveries following operations before the eighth day of the disease than after the eighth day, and that the mortality is only eight and one-half per cent. in those cases operated upon before the eighth day. If now the operation of incision is performed during the second or third day of the disease in these relapsing cases, the rate of mortality is lessened to such a degree (as shown by a study of Weir's, Bull's, and McBurney's cases) that the mortality is comparatively insignificant.

If now out of the eleven per cent. of cases of relapsing appendicitis there are deducted first those cases which terminate by resolution, and second, those cases which recover by early incision, it is obvious that only a small part of the eleven per cent. of cases are exposed to the remaining source of danger, viz., perforation and general peritonitis.

The whole question of removal of the appendix, therefore, practically has reference only to those cases in which a general peritonitis, the result of a perforation, is likely to arise. It is under these circumstances that death follows, and the excision of the appendix is the only measure that will remove

this cause of almost certain death. The line of argument thus pursued brings us face to face with the clinical fact that removal of the appendix is to be considered only as a means to protect a patient in the future from death by a peritonitis the result of a perforation. If it can now be shown that in the extreme emergency of a general peritonitis a laparotomy can save a patient, then the removal of the appendix during a quiescent period is deprived in a great measure of the only argument that can be claimed for its performance. Simple reference to the cases of Krönlein, Morton, Weir, Sands, McBurney, and others demonstrates that perforation does not necessarily preclude all possibility of recovery, which is the great argument in defence of removal of the appendix during the period of quiescence. The same line of argument may be carried even further, and it can be shown that perforation may occur and no laparotomy be performed, with still a possible chance for recovery. A proof of this statement may be found by a reference to the following cases.

Dr. Markoe reports the case of a child who had symptoms of general peritonitis upon the second day of an attack. A month later this child died from some other disease and the autopsy showed that perforation of the appendix had occurred, and that adhesions of the intestine had taken place. Dr. Biggs made an autopsy and found the evidences of a previous perforation of the appendix from sloughing. The appendix was found encysted in an old circumscribed peritoneal abscess.

A case is mentioned by Shaw where an abscess was formed in the scrotum from a perforated hernial appendix, and Thurman records a similar case.

Dr. Cabot reports a case where an inch of a previously perforated appendix was found in an abscess in the groin some eighteen months after an attack of appendicitis.

Ballou and Pooley each report a case where the appendix had sloughed and the patients recovered. Many other cases might be cited to show that even if perforation of the appendix has occurred it is not necessarily a fatal lesion.

Dr. Janeway made an autopsy on a patient who died some time after an attack of appendicitis. The appendix had been the seat of ulceration and perforation; but it had formed adhesions by inflammation to the surrounding tissues and no gas had escaped into the general peritoneal cavity, and as far as the perforation was concerned, the patient lived. It is an illustration of the clinical fact that a circumscribed peritonitis may shut off the appendix from the general peritoneal cavity and that even perforation may occur and not be a fatal lesion.

The best of all proofs that perforation of the appendix may occur and the patient survive such an attack, is found in a case in which an autopsy was made ten years after an attack of appendicitis. It was ascertained that the appendix had been perforated during the attack and that it had been accompanied with abscess and suppuration. Dr. Biggs, who made the autopsy, found that the tip of the appendix had sloughed from its base, to which it was still held by an impervious cord. The entire mass, including the base and apex, with the filiform connection between the two separated parts, was embedded in a mass of inflammatory new-formation tissue, which was adherent to the kidney and to the liver. This patient for ten years had no trouble with his appendix, and no one ever suspected the nature of his previous attack of illness.

If now I have made the thread of my argument clear, it is obvious that excision of the appendix has to do with only about 11 per cent. of the cases of appendicitis, for 89 per cent. of the cases are not relapsing, and therefore do not belong to the class of cases in which removal is indicated. Of the 11 per cent. a majority recover; because perforation is the exception rather than the rule. Some undergo suppuration and heal. Of the few cases exposed to the danger of perforation and general peritonitis some recover, as is shown by a reference to the cases just mentioned.

It is now pertinent to consider in detail the real arguments against removing the appendix during a quiescent period in the few cases where the attacks have been recurrent. The arguments which I would respectfully submit against this operation of excision during a quiescent period in relapsing cases are as follows:

1. The danger to human life.
2. The difficulties of a positive diagnosis.
3. The development of ventral hernia.
4. The lack of conclusive evidence that excision of the appendix is attended with permanent relief.
5. The result of relapsing attacks may afford an immunity from danger in the future.

1. *The danger to human life* is an argument which confronts the conscientious surgeon. Opening the abdomen for the purpose of finding the appendix vermiformis is certainly attended with risk to life. That risk increases in accordance with the amount of pathological change that has taken place. I must dissent from the view held by Morton, who speaks of this procedure as a "comparatively trivial operation at a time and under conditions when prompt and permanent relief and recovery can almost invariably be secured." The same opinion is also expressed by Senn, who writes: "Excision of the appendix in cases of simple uncomplicated appendicitis is one of the easiest and safest of all intra-abdominal operations." Such statements are misleading. In May, 1887, I excised the appendix, on

account of a stab-wound, with no difficulty as regards finding it; but to remove it and to invert the edges and to introduce sutures and to close hermetically the opening into the cæcum is a delicate operation which requires nicety of *technique*. It is by no means to be considered a trivial procedure, and upon the result of the operative work of the surgeon depends the life of the patient. The giving way of a stitch or the sloughing of a small shred exposes the patient to imminent peril. One bubble of intestinal gas is sufficient to infect the whole peritoneum, and such a catastrophe will in all probability lead to a fatal termination. The possibilities of hæmorrhage, of purulent œdema, of septic peritonitis, of suppression of urine, and of surgical shock must not be overlooked. These are the dangers to which a patient is subjected in the ordinary cases; but when, from recurrent attacks, adhesions have formed, the connective tissue has undergone pathological changes, the cæcum has become dilated, and the anatomical relations are disturbed, excision of the appendix becomes a serious operation. Surgeons have attempted to find an analogy between removal of the appendix and of the ovary. This comparison causes a tendency to attach too little importance to the excision of the appendix. It must be borne in mind that the vermiform is an integral part of the alimentary canal; it often is adherent to the large and important bloodvessels, it may be buried under the cæcum, it may be firmly imbedded in inflammatory exudation, the tearing of which may result in a rent in the intestine or ureter, and the sewing up of which requires time and skill. Not so with the ovary, for here the oozing is easily controlled, and if a pus cavity is found the cavity can be easily washed out and rendered aseptic. For these reasons the excision of the appendix cannot be looked upon in any light other than that of an operation attended with considerable risk to human life.

The operation of removal of the appendix during an interval between the attacks has been attended with a death-rate the precise percentage of which cannot be at present ascertained, because a report of all the cases has not yet appeared in print. It is safe to state, however, that the death-rate is higher than that of early incision on the second or third day of an attack. This one argument alone deprives the operation of its greatest advantage. Thus far, in dealing with this subject the ability to find and to remove the appendix has been assumed; but a most serious aspect of this question is the failure to find the appendix after the abdomen has been opened, or, owing to extensive adhesions, an inability to remove the organ. Recently I was present at an operation for the purpose of excision of the appendix. The laparotomy was performed upon the patient during the quiescent stage, and although the surgeon was one of the most skilful operators and one of the best anatomists, he was unable to find the appendix after a long and tedious search. The abandonment of this operation was wise and prudent, and I mention this clinical fact to impress the point that the operation is, of necessity, attended with great danger where a prolonged search must be made with the peritoneal cavity opened and the intestine exposed. When an operation becomes necessary it should be performed early during an attack, and at the same time removing, if necessary, the appendix. It is the proper line of treatment. It is quite another thing after an attack has passed and in the quiescent stage to attempt an excision. In the former case it is indicated to save life, in the latter case it is fraught with great danger to avoid a possible future attack, from which the patient may even easily recover.

2. *The difficulties of a positive diagnosis.*—No surgeon who has seen many cases of abdominal surgery can overlook the fact that the diagnosis is often fraught with the greatest difficulties and with much uncertainty. The more cases examined the more real becomes this fact. It is often impossible to arrive at a positive and clear diagnosis as to the real condition that has given rise to the attacks. The most skilled diagnosticians and the most experienced surgeons have made errors in diagnosis as regards lesions in this region. It is only necessary to review the list of diseases that already have been mistaken for appendicitis in order to estimate the weight of this argument against excision of the appendix during a quiescent period.

Among the conditions that have been mistaken for appendicitis may be mentioned the following: General or circumscribed peritonitis, pelvic peritonitis, renal, biliary, and intestinal colic, ovarian and lumbo-abdominal neuralgia, intestinal obstruction, floating kidney, pyelitis, cæcitis, internal strangulation, psoas abscess, pelvic cellulitis, rupture of the serratus magnus muscle, suppurative adenitis, typhoid, tubercular and stercoral ulcers, caries of ilium and of vertebræ, morbus coxarius, suppuration in the retro-peritoneal and mesenteric glands, traumatic rupture of intestine and right ureter, rupture of the bladder and of the gall-bladder, rupture of an aneurism in the broad ligament, sprain of the iliacus and psoas muscles, salpingitis of the right tube, abscess of liver, tubal pregnancy, typhlitis and perityphlitis.

This list does not embrace nearly all the conditions which eminent men in the profession have frankly acknowledged to have mistaken for appendicitis, or *vice versa*. The list, however, is of sufficient size to impress the important point that errors in diagnosis may occur, and that a laparotomy for

excision of the appendix may be performed and the real pathological condition which the operation is intended to relieve be other than a diseased appendix. Finally, it is significant that in some of the cases in which the appendix has been removed during the quiescent period no change sufficient to cause trouble could be found in the appendix. Within a month I have examined a specimen showing a perforation of the cæcum where appendicitis was diagnosed. If this patient had survived the attack and the appendix had been removed the operation would have been of no avail, for the lesion was situated in the cæcum.

3. *The development of ventral hernia.*—This interesting observation has been made by Dr. Bull, whose brilliant work in abdominal surgery is of world-wide reputation and entitles his opinion to the highest respect.

This condition is not likely to follow the early incision which is made during an attack to allow pus to escape, because the incision under these circumstances is very small, whereas, in a laparotomy for excision of the appendix during the interval of attacks, the length of the incision is from four to five inches. Several cases of ventral hernia following operations for removal of the appendix have been reported. The special situation of this incision and the peculiar character of the parts divided, and the tendency of the wound to gape, render the development of hernia a most serious complication. There is no doubt that this condition can give rise to strangulation, and even if strangulation does not follow, the presence of the ventral hernia is a source of great discomfort and annoyance to a patient.

4. *The lack of conclusive evidence that the excision of the appendix is attended with permanent relief.*—Time is the crucial test to settle this important point. The cases that have been published bear witness to the fact that the operation has been performed, but the period of time is too short to base any conclusions as to the ultimate result. If the excision has been performed in a case where the appendix alone was involved, the result may be satisfactory as regards the appendix; the pathological process, however, which established the lesion in the appendix may subsequently develop in the cæcum and changes similar to the original attack may then ensue. If the appendix has been removed when the lesion is in the cæcum the relief does not follow.

To what extent the operation will afford immunity in the future is still a question *sub judice*. There is positive evidence that recurrent attacks may terminate in a final one with recovery, and the patient enjoy years of immunity. He may never have any return of the trouble. I know of one patient residing in a southern State who has had fourteen consecutive attacks of appendicitis; but during the past five years has never had the slightest indication of any disturbance. These fourteen attacks occurred during a period of a few years, and the patient was able to trace the cause of the attacks to the use of cathartics and to a peculiar diet. Since he has abandoned cathartics and has lived upon a meat and gluten diet he has never had the slightest indication of trouble. His appendix may be so situated as to never develop another attack. An attempt to excise his appendix might be attended with a fatal issue.

5. *A condition following relapsing attacks may afford immunity from danger in the future.*—I feel certain that some surgeons will dissent from this view; but I shall endeavor to prove the correctness of the statement from pathological material and from clinical data. One great mistake that surgeons commit in discussing this subject is to consider all cases of appendicitis doomed to immediate death. Investigation and observations are made at the time of a contemplated incision to avert perforation, consequently the subject is viewed from very narrow limits. I believe that often a single attack from which recovery follows places the appendix in such a position that no further harm can result to the patient. For example, I have four microscopical specimens showing that the appendix in a cross-section has become completely obliterated as a result of appendicitis, and that instead of the normal duct with its narrow lumen filled with glairy mucus an impervious cord exists. This change is the result of a previous inflammatory process, as is seen by an examination of the tissue. I know of other cases where the same condition is present. If this is true in regard to a single attack, why may not the last of recurrent attacks place the appendix in this same condition? An appendix, then, that is an impervious cord becomes so by inflammatory processes, and I fail to find a report of an autopsy where the patient died from an attack of appendicitis and in which the appendix was an impervious cord.

These cases of obliterated appendices are found incidentally, and upon microscopical examination the fact is revealed that the cords are the result of a previous attack of appendicitis. But the impervious cord is not the only condition that may afford immunity to a patient. For example, I have specimens showing some interesting conditions resulting from appendicitis. One specimen shows that the duct was embedded in a dense stratum of inflammatory new-formation behind and to the outside of the cæcum, and entirely shut off from the general peritoneal cavity. A perforation had previously taken place. A small foreign body was lodged in a circumscribed cyst cavity. In another case an

autopsy was made upon a patient who had died suddenly from heart disease, and the appendix was found buried in a mass of areolar tissue continuous with a dense band of tissue adherent to a cicatrix upon the skin. This mass of tissue in which was embedded the appendix with a cicatrix denoting a slough was behind the cæcum and the peritoneum. Several years previous this patient had suffered from an attack of appendicitis; perforation had followed and the appendix was placed in a position never again to give rise to any trouble. The condition of perforation was not diagnosed at the time of the attack and the patient never suffered ill consequences from the new position of the appendix. I have also another specimen of an appendix which was situated behind the cæcum and adherent to it. A perforation of it would have been extra-peritoneal, and in that case the danger of a purulent peritonitis would have been avoided. I believe that exceptionally a few of these cases of abscess connected with the appendix are outside of the general peritoneal cavity; but, of course, the large majority of them are intra-peritoneal. Any attempt to excise an appendix during the quiescent period under the circumstances just mentioned would be attended with very great danger, whereas no trouble would ever arise from the condition of the parts.

I know of three cases where the appendix had become adherent to the wall of the cæcum and perforation had occurred through the adherent surfaces directly into the lumen of the cæcum. The escape of pus *per rectum* is the proof offered in these cases of typical appendicitis. The patients recovered and the appendices in their present condition of adhesion with the cæci will probably never give rise to mischief.

To recapitulate, it seems from an examination of the clinical facts and of the pathological material, and from a careful study of the reported cases of appendicitis that excision of the appendix pertains to only eleven per cent. of all the cases of appendicitis. Of these cases represented by eleven per cent. many undergo resolution, some terminate by abscess opening spontaneously or by early incision, while a few are exposed to the dangers of perforation and general peritonitis. Excision of the appendix is suggested as a preventive measure in the small percentage of cases of relapsing appendicitis in which perforation is feared. It has, however, been clearly proved by my specimens that even perforation and general peritonitis are not in all cases fatal complications.

So, then, if those cases of perforation in which recovery follows—and they are more frequent than has been supposed—are deducted from all the cases of perforation, there are left but a few concerning which the question of the propriety of excision of the appendix would arise. If, now, it is remembered that an incision on the second or third day during the attack in relapsing cases, is attended with most brilliant results, showing a mortality of only a small percentage, is it not wise to observe conservatism and decline to excise the appendix during a quiescent period, when its death-rate is higher than the death-rate of early incision upon the second day? The results which Dr. Willard Parker obtained by operating during the second week after adhesions had formed were brilliant, considering the high death-rate previous to his suggestion. The improvement upon Dr. Parker's operation by early incision upon the second or third day has left but little to be desired in the management of these cases during an attack. Are not, then, a patient's chances for life better after an incision upon the second or third day during an attack than they are after a laparotomy performed during the quiescent period, with the view of removing an appendix which may not be found, and if found cannot be safely removed. Does not such an operation expose the patient to a greater peril than the management of a future attack by early incision?

In conclusion the clinical fact must not be lost sight of that the last attack from which the patient suffered, may have placed his appendix in a position that precludes the possibility of a future attack. From a consideration of these facts it seems wise to condemn the operation of excision of the appendix during the quiescent period as routine practice. Some special reasons should exist to justify the operation—reasons that do *not* exist in the majority of cases of relapsing appendicitis. That occasionally a case may be presented in which excision of the appendix is indicated, I do not deny, but as routine practice in all cases of relapsing appendicitis it is a measure fraught with greater danger than incision and removal upon the second or even the first day of a recurring attack. If this very early incision, as suggested by Sands and practised in several cases by McBurney and others, is resorted to in these relapsing cases, the question of excision of the appendix will arise only in connection with an early attack. If relapsing cases are operated upon at the onset of the trouble the prognosis is better than in those in which later incision is employed. It is one of those operations of expediency which should never be performed, even in a case preëminently suitable, without a thorough examination of the heart, lungs, and kidneys, for under no circumstances, with organic disease, should so bold an operation be resorted to unless the patient is confronted during an attack by death itself. To excise during an interval between recurring attacks in a patient suffering from any organic disease is ex-

posing that patient to a certainty of death, while conservatism might result in a prolongation of human life, during which time no other attack may arise. If an attack should develop, the early operation upon the first or second day in a relapsing case might offer a prospect of recovery that would be more favorable than was at first supposed. At all events, this line of practice does not expose the patient to the danger of death before he is confronted with it, and then it is not too late to expect an escape by a resort to the new and early operation of incision and excision before serious changes have developed that might place the patient's life in jeopardy.

A CLINICAL HISTORY OF TWENTY-TWO CASES OF FILARIA SANGUINIS HOMINIS,

Seen in Charleston, S. C., from 1886 to May, 1890.

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MY excuse for this paper is that it deals with a disease scarcely known eighteen years ago, and still but imperfectly understood.

Whether or not filaria have just appeared in Charleston I am not prepared to say, but the case-book of the City Hospital shows that in 1882 or '83 Dr. J. J. Edwards, then a student of medicine, together with several members of the house-staff of the hospital, looked for filaria in the blood of a chyluric patient; and that in 1884 Drs. Edwards and W. D. Bratton examined again and again the blood of a chyluric pregnant woman for filaria, but with negative results. In 1886 Dr. John Guitéras gave the subject a new start, this time with success.

The arduous duties of a large dispensary practice leave me little time and less energy with which to make original research, nevertheless at the end of this article I have set down some facts noted while studying the subject.

CASE I.—A mulatto woman aged about forty. At the time filaria were first found (1886) she was a patient of Dr. Edwards, but had sought treatment of many doctors. She was born in Charleston, S. C., lived in Augusta, Ga., five years, but removed to her birth-place and has lived there ever since. Has had for the last ten years chyluria, with vague lumbar pains, occasional diarrhœa, and during the last three years an irregular fever with chills. In 1884 or 1885 I treated her for lymphangitis of the vessels and glands of the left leg. After some weeks the inflammation seemed to settle in the popliteal space, for in that place I opened an abscess. The pus was not peculiar, but the healing process was slow. During this attack the patient was unable to follow her vocation, that of a seamstress, but before and since she has been able to work; I have lost sight of her for the last two years. This, then, was the first case in which living filaria were found, and the examination of her blood was suggested by Dr. Guitéras.

CASE II.—A patient of Dr. Edwards. A negro aged nineteen or twenty years. Born and brought up in Charleston, S. C., in the vicinity of which he has spent all of his life. He has spent two or three months of several summers at Mt. Pleasant, a summer resort for Charlestonians, just across the bay. By occupation he was a house-servant. He sought Dr. Edwards's advice for the relief of rapidly developed chylocele which the patient thought was due to traumatism. Dr. Edwards submitted to me some of the fluid drawn from the scrotum and in it I found dead filaria; two nights afterward living filaria were discovered in his blood. Drs. Edwards and Guitéras thought he then had beginning elephantiasis of the scrotum. Shortly after this a mitral regurgitant murmur and dropsy presented themselves. The murmur and ascites increased and the patient died, apparently from heart failure. No post-mortem was allowed.

CASE III.—John G. A nearly pure negro, aged sixty-five, born and brought up in Charleston, S. C., which he claims as his residence, though he has been for months at a time on a rice plantation in South Carolina, at Flat Rock, N. C., and at Newport, R. I. By occupation he is a valet and house-servant. Had perfect health up to 1882, when, following some exertion, he had lumbar pains and hæmato-chyluria, and it was for this that he sought a doctor's advice. In 1883 he came under my care and a careful examination of his urine revealed dead filaria (not then recognized as such), blood, pus and mucous corpuscles, with epithelium from bladder and kidney. A diagnosis of pyuria was made and under tonics and astringents the patient improved, the hæmato-chyluria, lumbar pains and slight diarrhœa returning at intervals, until the fall of 1884, when once more he presented himself for treatment, having then headache, a heart murmur and a swelling of the right side of his neck resembling a unilateral goitre. He again improved under treatment. In 1886, after seeing the filaria in Cases I. and II., I recognized that the objects seen in this patient's urine in 1883 were filaria, so I examined his blood, and found living filaria. In 1889 the patient was once more under treatment for dyspnœa, palpitation of the heart, and persistent headache. In April of that year ascites developed, but under digitalis and iron the patient was relieved. During this attack the patient's heart was embarrassed, but exactly what the trouble was I am unable to make out. The abnormal sounds could not be classified. For the last half year the patient has been able to go about, but any undue exertion distresses his heart and brings on an attack of hæmato-chyluria.

CASE IV.—Mulatto man aged sixty-five, by trade a carpenter, born in Charleston, S. C., which place has been his home, but he, like most of the patients reported, has from time to time lived in other parts of the State. His health was perfect up to seven years ago, when he had his first attack of hæmato-chyluria, which was preceded by lumbar pains, abdominal colic, and dysentery. His medical attendant diagnosed cholera morbus. In 1887, when he

came under my care, his blood was examined and filaria found.

CASE V.—Allen, a negress, aged forty-two, born in South Carolina. Has lived in Charleston for the last twenty years, but is not clear as to her previous residence. By occupation a cook. Has suffered from chyluria for five years. No other trouble until three years ago, when she had back-ache, colic and slight dysentery, but did not stop working. Filaria found in the blood in 1886. She is a widow, has had several children, only one of whom is living. She does not know of what her husband or children died. Looking for some hereditary influence, I asked that her child should come to the office.

CASE VI.—Allen's son, a lad aged eighteen years, born and brought up in Charleston. Is an epileptic, but otherwise is in excellent health. No pains nor chyluria. Blood examined in 1887 and filaria found. The filaria do not seem to give this patient any trouble. Bromides control his convulsions more or less.

CASE VII.—Mr. B., thirty-three years old, born in Charleston. Is now a constable, but has followed different occupations, one of which carried him for several months to Nassau, where he had "fever" during the late war. In 1870 he had his first attack of chyluria. Between 1870 and 1880 he had a peculiar inflammation of the glands of the groin. He says his physician could do nothing with them, and that finally an abscess formed. Since 1887 with his chyluria he has lumbar pains and some dysentery. Filaria were found in 1887. He does not know if they had previously been looked for.

I think this patient is mistaken in regard to his age, which I would say is about forty-three.

CASE VIII.—Mr. Y., aged about twenty-seven, born in Charleston, S. C., where he has spent all of his life. On account of a diseased hip-joint he has never been able to do much manual labor, though he has been a great deal about the shipping. Excepting hip disease he enjoyed perfect health until four years ago, when, following a liberal meal at a picnic, he was seized with cholera morbus. From then until now he has been subject to attacks of dysentery with abdominal pains. Examined for and found filaria in 1888.

CASE IX.—White female, aged thirty-five; born and raised in Charleston, though she has visited for two or three months on various plantations in the vicinity of Charleston. She is married, and at the time of first observation in 1887 had one child. Her health was good until the latter part of her first pregnancy, when she began to suffer with chyluria and severe pains in the lumbar region. The urine was white until after labor, when it became natural and remained so until the eighth month of her second pregnancy, when the urine became white again. I saw her for the first time at this period and found chyluria and rectal tenesmus. The urine contained vesicular masses large and small, the former about one and one-half inches long by one inch broad. These vesicles were entirely new to me and I can only describe them as looking like egg albumin enclosed in a fine membrane, the whole being in color and transparency like uncoagulated albumin. Sometimes they would be arrested in the urethra and pass only after long bearing-down efforts. I examined several of the masses, for they could be handled, though soft and compressible, but I could make nothing out of them. Once I thought I had a Bilharzia ovum, but of this I am not sure. I can only say that the vesicles and what I saw in one of them under the microscope were new to me. In this patient's blood filaria were found a few hours before labor, as well as the night before. Immediately after labor none were found either in blood from the cord or in that drawn from her finger. Examination of the blood and milk on the following day was also negative and no filaria were found in the child's blood. After some weeks chyluria disappeared, but filaria were again found in the mother's blood (child's blood was always negative). Patient became disgusted with so many examinations and I lost sight of her until 1890, when once more she consulted me and I found that she had been confined again in 1889. She said that she had had no trouble during pregnancy, but this I doubt, and think she made the statement to keep my needle out of her baby, to whom I had been summoned to relieve it of dysentery. The whole family—father, mother, and three children—were examined, and I got negative results and my discharge. The child has since died under the care of another physician. The certificate of death shows entero-colitis as the cause.

This case is particularly interesting, for the discharges from the four-months-old infant were identical in appearance with those of the other patients suffering from chyluria and dysentery.

CASE X.—Mr. G., aged fifty-seven, born in Ireland, has lived in Charleston for the last 35 years. He has been a wanderer and is a "jack of all trades." Since 1875 he has been much of the time in hospital, complaining of vague pains. In 1887 he applied for relief of lymph scrotum and enlarged groin glands. Filaria found in blood glands, which were removed, but were not adult filaria.

CASE XI.—S., aged fifty-eight, born and brought up in Charleston. Present occupation that of a house-cleaner, but like most negroes, has turned his hand to everything, and I must say of him as I have of others, that he claims Charleston as his residence, but acknowledges visits to other places; for instance, he was in Savannah, Ga., for four months. He sought relief in 1888 for chyluria of several months' standing, with lumbar pains and dysentery. Filaria found, and from eye measurement I would say that they were larger than the average. This patient had, during the month preceding his coming to me, an irregular fever with chills; no enlarged glands present.

CASE XII.—J., aged fifty-five, born in South Carolina. Resided for last ten years in Charleston; before that in different parts of the State, with visits of months' duration to North Carolina and Georgia. His work at times has been loading and unloading vessels. Has had chylocele for four years. This

rapidly growing larger, he applied for treatment in 1889. Blood examined and filaria found. On being told that an operation would have to be performed he left, and I have no further history.

CASE XIII. (Should have been reported amongst cases found in 1886.)—A negress, one hundred years old, born in Africa. Was brought over to South Carolina in a slave-ship.

With the exception of four years, she has lived in Charleston. Called to attend her in 1886 for a cold abscess, pointing just over the scapula. Her age prevented her from giving much of a history. Thinking that her birth-place gave her a right to filaria, I examined her blood and found them. She was sent to the hospital, where the abscess was opened, but nothing peculiar was noted about the pus. She has since become insane, and has been for the last three years in an asylum. The assistant physician writes, May 10th, that "she has occasional chyluria, but no glandular swellings, and, in fact, is remarkably well." Filaria were found two weeks previously.

CASE XIV.—Mr. J., aged forty-five, patient of Dr. J. L. Dawson, Jr., who gives the following history: Birth-place and residence Charleston, S. C., but has lived in Florida, Georgia, and North Carolina. Has had chyluria for years. An attack is always preceded by lumbar pains. Is married and the father of several children, all of whom are healthy. This patient's occupation for the last few years has been that of a book-keeper to a large fruit firm, and from time to time he drinks water on vessels from Cuba and the West Indies. Had chyluria before this, however. Filaria found in 1888.

CASE XV.—Mr. M., aged thirty-two, lawyer, a patient of Dr. Kinloch's; birth-place and residence Charleston, S. C. Filaria found in blood by Dr. Kinloch in 1887; subsequently in urine and blood by Dr. Guitéras. Chyluria is the only symptom that he presents.

CASE XVI.—Mrs. B., aged fifty-two; born in Germany, but has lived in Charleston, where she came direct from Germany thirty years ago. By occupation a cook. Has had chyluria for the last eight years, but no other symptoms, save lumbar pains. Filaria found in 1887. Has one child, a boy, born since her arrival in this country. The boy's blood gives negative results.

CASE XVII.—M., male, aged about sixty years; born in South Carolina. Lives now in Charleston, but has lived in different parts of the State. In good health until several months ago, when he began to have trouble with his urine, which he describes as muddy and streaked with blood. Applied for treatment of cystitis. Dr. Edwards thought that the disease might be caused by stone, but the sound gave negative results, so we determined to look for filaria, which were found in his blood in 1890. This patient complains of great muscular weakness.

CASE XVIII.—Mrs. F., aged twenty-six, a patient of Dr. Manning Simons. Born and raised in Charleston. Is married and has two children. Has had chyluria for fourteen years. Has also had irregular fever with chills, and enlargement of the lymphatics of left leg and arm. None of these have ever suppurated, and the patient is able to go about attending to all of her household duties. Filaria found in 1890.

CASE XIX.—Sallie, aged forty-five, patient of Dr. D. Ryans. Born in South Carolina, lives in Charleston now, but gives no clear history of her birth-place or residence before she came to Charleston. Gives no account of the duration of chyluria, which is her only trouble. Is married and the mother of several children. Filaria found in 1890.

CASE XX.—Frank, aged forty-five, patient of Dr. Ryans. No history, save that he was born in South Carolina and has lived in Charleston for many years. Applied for relief from chyluria, which he says he has had for years. Filaria found in 1890.

CASE XXI.—Martha R., aged forty-eight; born in South Carolina; residence for last twenty-six years, Charleston. Health good until seven months ago, when she had an attack of hæmaturia, consequent upon gravel, her physician thought. Since then she has suffered from palpitation of the heart and dyspnœa. Three weeks ago œdema of the lower extremities appeared. On May 13, 1890, presented herself for treatment. Filaria found.

CASE XXII.—Gibbes, aged sixty, born in South Carolina; residence for last thirty-six years, Charleston. Health perfect until six months ago, when he had an attack of palpitation of the heart with dyspnœa; this has grown rapidly worse for the last month. Œdema of feet and lower extremities now. Filaria found, May, 1890.

Tabulating the cases, I find that the disease was distributed as follows: 9 colored males, 6 colored females; 5 white males, and 2 white females. Of the 22 cases 16 were in married people, all of whom had children. In over one-half of the cases filaria were searched for in children of the married, in husbands or wives, or in friends and bed-fellows of the single ones; and yet but in a single instance did I find two cases in the same house (Cases V. and VI.). In the child of Case IX. I think, if the search could have been carefully carried on, filaria would have been found.

As to the social conditions of the patients, 15 were colored, 7 white; of the latter only three can be said to be in high life. All of the others, black and white, belong to the lower and middle classes. Why this difference? Is it from abode or diet? The houses of our domestics and laborers are very similar to those of the same classes elsewhere.

In reference to the diet and water, the former is that of the working-class in other cities, only that here they eat a great deal of fresh fish—in fact, during the summer months fish of some sort takes the place of meat. As to the drinking-water, I differ absolutely from Dr. Guitéras, for he considers it mainly cistern, and I know from a ten-years' practice amongst the lower classes that it is mainly

pump or artesian, and exceptionally cistern water. Sometimes, for a short period just after rain-storms, the poor have barrel water, but the supply soon runs out, and they go back to the pumps and artesian wells. A word about the barrel water, which is rain-water caught in barrels and casks open to dust and dirt, and one can always find with the microscope many living things in the water. The same is true of the artesian water, which, though it comes from wells 1800 to 1900 feet deep, is, before being served, stored in an open reservoir, which, to the best of my knowledge and belief, is bricked halfway down the sides, but only puddled at the bottom. I am not enough of a microscopist to say to what class the animals found belong, but know this, that with the microscope I have spent hours seeing them fight and destroy each other. The better class of Charlestonians drink cistern water. As to mosquitoes, I think they are as common in the homes of the rich as in those of the poor.

Diagnosis of the disease can alone be made with the microscope, for by reference to the table attached to this paper we find that chylocele, chyluria, lymph-legs, and glandular enlargements are frequently found, yet examinations of the blood may fail to show filaria. Again, we find filaria without any of these disturbances (Cases VI., VII., X., XXI., and XXII.).

There is no pathognomonic symptom. Sometimes we have fever and chills, at other times neither. The disease, as a rule, does not appear to prevent the patients from working. Cases II. and III. are exceptions, and some of the other patients were for a time disabled, but returned to their duties, and the filaria were still found when looked for. The chyluria is intermittent, and in no case that I have seen was it always present; and I would state further, that during its presence a given specimen of blood would not show more filaria than another specimen examined when chyluria was absent. In but two cases have I ever failed to find filaria after having once seen them (Cases VIII. and IX.). In Case III. his residence for three months at Flat Rock, N. C. (at an elevation of 2000 feet above the sea-level), always reduced the number of filaria, but after being in Charleston for eight months they became numerous again. Would they entirely disappear if he remained in the mountains?

To show the impossibility of making a diagnosis without the microscope, I would state that during the last three years I have examined three cases of chylocele with negative results (blood of two, fluid of one). Six cases of chyluria and one of hæmatochyluria have also given negative results, though one of these may yet prove to be a case of filaria, for it occurs in a patient who is a printer, and as yet I have not been able to examine him at the end of his work, which is about 5 A.M. Five cases of elephantiasis of the leg have been under observation, but no filaria were found.

Learning from our veterinary surgeon, Dr. Benjamin McGinnis, Jr., that filaria were very common in the dogs of Charleston, with his and Mr. L. W. Bacaise's assistance I made some observations on the disease in the dog, and I found that the embryo filaria in man and dog are identical—those of the man being possibly a little larger and their movement more active and strong. Very early in the investigation I was surprised to find that in the dog the embryo filaria could be found at any time of the day or night. In man it is different for I have been able to find them in the day but twice, once at 10 A.M. in the negress from Africa (Case XIII.), and once at 5 P.M. (summer) in John G. (Case III.)

Carrying the investigation still further, I examined fleas from filarial dogs, but got negative results until the morning of May 14th, when I found two filaria in the body of a flea which was taken from a diseased dog. This observation will, I hope, be confirmed, for it may throw considerable light on the mode of infection. I had purposed to make some examinations on the puppies of an infected bitch, but time has been wanting. I therefore would suggest that anyone interested in the subject may, by such examinations, clear up the question of heredity.

In the dog the disease causes death from ascites, which seems to be in consequence of the adult filaria collecting in the heart, a condition that we found in five post-mortems.

It is worthy of remark that in the one case of death occurring in a patient known to be afflicted with filaria, the cause of death was "dropsy with heart failure"—no post-mortem was allowed, so the presence of the adult filaria in the heart was not proven. It is suspicious that Cases II., III., XXI., XXII., should have heart murmur and dropsy.[1]

A REPORT OF TWO CASES OF STRICTURE OF THE URETHRA AND CHRONIC PROSTATITIS PRESENTING INTERESTING REFLEX SYMPTOMS.[2]

BY THOMAS R. NEILSON, M.D.,

INSTRUCTOR IN GENITO-URINARY DISEASES IN THE UNIVERSITY OF PENNSYLVANIA, SURGEON TO THE EPISCOPAL HOSPITAL AND TO ST. CHRISTOPHER'S HOSPITAL FOR CHILDREN, ETC., PHILADELPHIA.

THE two cases which I have the pleasure of reporting in this paper have seemed to me to possess sufficient interest to warrant their being recorded,

[1] I would beg to return to Dr. Louis R. Staudenmayer, of Charleston, my thanks for his help in making microscopic examinations and preparing this paper.

[2] Read before the Philadelphia County Medical Society, May 28, 1890.

because of the marked and peculiar symptoms associated with the disease of the urinary outlet present in each.

CASE I.—Mr. ——, a well-developed, athletic young gentleman, twenty-four years of age, came to my office in December last, giving me the following history: About a year previously he had had what seems to have been an attack of subacute urethritis, following an exposure. For this he used, by advice, a strong solution of sulphate of zinc as an injection, with the result of aggravating the symptoms to a considerable degree. Later in the attack a catheter, which entered the canal with great difficulty, was passed, and again the symptoms were for a time increased. Gradually the discharge and other symptoms subsided, but never entirely disappeared. At the time of his first visit to me he complained of frequently recurring attacks of scalding on micturition, accompanied with a purulent or muco-purulent discharge, worse after defæcation, and with an annoying itching just within the meatus. At times this itching was felt over the glans penis, the scrotum, and in both groins. In addition, a sharp pain, neuralgic in character, was felt just below the umbilicus, coming at irregular intervals, lasting for a few moments, and then suddenly disappearing. Simultaneously with the occurrence of this pain, a tickling sensation in the throat was felt, and a short, laryngeal cough was provoked.

The patient had observed that friction over the umbilical region, such as that occasioned by using a towel after bathing, would aggravate the itching in the anterior portion of the urethra when it was present, or produce it when it was not noticed. In addition to the urethral trouble, the patient suffered slightly from internal hæmorrhoids, and when these were congested, during constipation, the itching in the urethra was slightly increased.

Upon examination, I found the circumference of the penis to be three and three-quarters inches, the meatus very small, only 12 (F.) calibre, and the anterior portion of the urethra excessively sensitive to the small-sized rubber bougie which could be introduced into the orifice.

The first step in the treatment consisted in the division of the meatus, so that it would easily admit a No. 34 sound. Being then able to further explore the urethra, I discovered a stricture of 26 calibre at two and three-quarter inches from the meatus, and a gleety condition in the bulbous portion. The whole canal, especially the posterior portion, was extremely tender, and a characteristic prostatic discharge was brought out on the shoulder of the bulbous explorer. Subsequent treatment consisted in passing at regular intervals full-sized steel sounds, the use of hot sitz baths, and the local employment of a sedative and astringent lotion for the itching of the scrotum and groins. After the sounds had been passed a few times the tenderness of the urethra disappeared, micturition was of course much improved (owing to the enlargement of the constricted meatus), the itching sensation in the urethra was no longer observed, and the pain near the umbilicus and the tickling in the throat ceased. It is interesting to note that at first, during the employment of the sounds, the latter symptoms were always aggravated for a short time after each visit.

By the first of April the patient considered himself well, but a little later, after taking a heavy cold and being indiscreet in his diet, the prostatic trouble was excited again, being manifested by a mucous discharge from the urethra while at stool, and a return of the itching near the meatus, but less intense than formerly. Under treatment this condition has again subsided, and the patient is now practically well.

CASE II.—Mr. ——, also a private patient, a gentleman twenty-three years of age, having the history of an attack of gonorrhœa, complicated by prostato-cystitis, three years before he first consulted me, which was at the beginning of this year. The symptoms present were a slight gleety discharge, and burning pain on micturition and occasionally during the intervals. Whenever this pain was present there was also felt a similar pain on the inner border of the left foot near the first metatarso-phalangeal joint, and extending to the ball of the great toe. Friction of the glans penis by contact with the clothing produced the painful sensation, both in the urethra and in the foot; and, conversely, rubbing the foot upon a carpet or rug, or warming it before a fire, would excite the sensation in the urethra.

Examination showed: Circumference of penis three and a half inches, a stricture of 24 calibre at two and a half inches, and a highly sensitive condition of the urethra, most marked in the posterior portion, from which the discharge of chronic prostatitis was obtained by the explorer. I advised internal urethrotomy for the stricture, but my patient would not consent, preferring to trust to the less certain method of gradual dilatation. Prescribing a mixture of the bromide of potassium, tincture of hyoscyamus, and camphor water, for the purpose of reducing the abnormal sensitiveness of the urethra, I began the treatment with sounds, and, as the condition of the urethra improved, the painful sensations, both in that canal and in the foot, became less frequent and less intense, and had nearly disappeared when an attack of illness necessitated the discontinuance of the treatment. After recovering from this attack my patient left the city, by the advice of his physician, and on his return, recently, tells me that he again has his old sensations, and has decided to submit to the operation of internal urethrotomy.

REMARKS.—The existence of pain or other morbid sensation in association with or arising from stricture of the urethra, cannot, of course, be considered exceptional. All authorities upon the subject of stricture mention among its symptoms (exclusive of those at the seat of the lesion or lesions) pain in the perineum, the hypogastrium (when cystitis is present), the small of the back, the loins, the testes and groins, and sometimes extending down the thighs. Sensory disturbances at more remote situations are certainly exceptional.

A case similar to the second here reported was described by Sir Benjamin Brodie, in his "Lectures Illustrative of Certain Nervous Affections" (*Dunglison's American Medical Library:* "Medical and Surgical Monographs," Phila., 1838, p. 38). The case was that of a gentleman who consulted him on account of a pain in the instep, so severe as to make him lame. Incidentally, the existence of a stricture was discovered, and its dilatation was followed by the relief of the pain.

I have not been able to find any reference to a case resembling the first one of this paper, certainly not so far as the throat symptoms are concerned.

MEDICAL PROGRESS.

Quinine and Sulphur in the Treatment of Diphtheria.—According to the *Provincial Medical Journal*, DR. BURGHARDT employs equal parts of quinine and flowers of sulphur in the local treatment of diphtheria. The powder is blown upon the false membrane, after which, if the disease is in the pharynx, the patient is not permitted to swallow anything for an hour and a half. As a prophylactic measure the powder is also insufflated into the nasal cavities, even when these parts are not infected. Of the thirty three cases treated in this manner by Burghardt all recovered, and in none was the powder applied oftener than twice daily. Internally he prescribed the tincture of the chloride of iron. In addition, the patients were bathed with vinegar, and were given wine, brandy, and milk.

Therapeutics of Green Coffee.—DR. LAUDARABILCO recommends an infusion of green coffee in the treatment of gout, gravel, nephritic colic, and migraine (*Journal de Médicine de Paris*). The following varieties of coffee are used: Martinique, one-half; Mocha and Bourbon, of each, one-fourth. At night six drachms of the mixture are placed in a glass of water and macerated about twelve hours. The contents are then stirred and strained, and the clear liquid drunk without sugar, and while the stomach is empty. Food may be taken soon after. The results are said to be extremely good.—*Provincial Medical Journal*, June, 1890.

Thallin in Typhoid Fever.—DR. FRANZ SCHMID has published an inaugural dissertation on the treatment of typhoid fever with thallin, his observations being made upon twenty-five cases. The drug was administered in doses varying from ¾ grain to 3 grains every hour. The author draws the following conclusions:

1. In the above-mentioned doses thallin has an excellent antipyretic action in typhoid fever of moderate severity. In severe cases it is not very effective. In the former cases it has a good effect on cerebral symptoms.

2. The drug does not cause collapse nor renal irritation, and it is without disagreeable effects on the heart and lungs.

3. It seems to reduce the mortality of typhoid fever, but has no appreciable effect upon the duration of the disease.

4. The thallin treatment is of as much value as the hydropathic treatment, and is, of course, less annoying to the patient.

In the *Correspondenzblatt für Schweizer Aerzte*, No. 9, 1890, Ruetimeyer writes that he has never seen collapse following the use of thallin, even when given in much larger doses than those of Schmid, and that even in severe forms of the disease it has a good effect on cerebral symptoms.—*Provincial Medical Journal*, June 2, 1890.

Prescription for Eczema in Children.—The following prescriptions for eczema in children are quoted in the *Annals of Gynecology and Pædiatry:*

1. ℞.—Bismuth subnitrate . 4 drachms.
   Zinc oxide . . . 1 drachm.
   Carbolic acid . . ½ drachm.
   White vaseline . . 2 ounces.—M.

2. ℞.—Bismuth subnitrate . 2 drachms.
   Zinc oxide . . . ½ drachm.
   Glycerin . . . 1½ drachm.
   Carbolic acid . . 20 minims.
   White vaseline . . 6 drachms.—M.

The latter is a very elegant and soothing ointment.

If there is much stinging and irritation the following lotion will be found valuable:

℞.—Bismuth subnitrate . 1 drachm.
Glycerin . . . 4 drachms.
Carbolic acid . . 12 minims.
Rose-water to make . 1 ounce.—M.
Shake, and apply with a soft brush.

Cancer of the Pancreas; Extirpation; Recovery.—A successful extirpation of a primary cancer of the pancreas is reported by PROFESSOR RUGGE, of Bologna (*Medicinische-chirurgische Rundschau*, April 15, 1890). The patient, a woman of fifty years, came to Rugge's clinic in August, 1889, complaining of constant gastric pain, anorexia, and obstinate constipation. The pain began in the epigastrium, spreading from there to other parts of the abdomen. Physical examination revealed a tumor in the neighborhood of the transverse colon in the left hypochondrium and surrounding the umbilicus. The tumor was rather irregular in shape, felt firm on pressure, and measured about ten inches in length and four inches in width. The author made the diagnosis of probable retro-peritoneal sarcoma.

The patient insisting on the removal of the tumor, operation was undertaken on September 4th. The removal was rendered extremely difficult by the softness and fragility of the growth and numerous adhesions. Finally, extirpation was accomplished and the growth was found to be the pathologically changed pancreas, which the microscope proved was carcinomatous.

Healing of the wound was most rapid, and the general condition of the patient improved from day to day, and notwithstanding the fact that she desired and received a mixed diet, digestive disturbances diminished and finally disappeared. The author thinks that this remarkable case shows that after total extirpation of the pancreas other glands perform its functions, particularly Brunner's glands and Lieberkühn's follicles.

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SATURDAY, JUNE 28, 1890.

CODEIN.

ACCORDING to LOEWENMEYER (*Deutsche medicinische Wochenschrift*, No. 20, 1890), codein is very little employed in Germany, notwithstanding the encomiums which it receives from physicians elsewhere and especially from the French.

He therefore recently instituted an extensive series of observations in Jacobson's service at the Jewish Hospital in Berlin. Some five thousand doses of the drug were given to about four hundred patients, some of whom took it for weeks, and others for months; yet in no case did he observe any untoward results. He therefore recommends its use in place of morphine, rating it as a narcotic of somewhat lesser intensity than the latter, but on the whole superior, because of its freedom from danger. He especially endorses Dr. Lauder Brunton's assertion of the peculiar applicability of codein to the relief of painful affections of the abdomen. Gastralgia, colic, and the various visceral neuralgias seemed peculiarly amenable to its influence. The patients had long periods of respite from pain. They found sleep, and when, after a certain time, new exacerbations occurred, the medicament in the same dose as at first still exerted the same favorable influence.

Far more important than the relief of functional disturbance, however, in which the psychic factor may be presumed to have more or less influence, is the possibility of relieving the pain dependent upon organic disease, gastric cancer, cancer of the liver, cancer of the intestine, etc. While morphine was effective in ninety out of one hundred cases of this nature, codein succeeded in only sixty.

The question as to the indications for one or the other of these drugs is quite difficult to answer. Excluding idiosyncrasies, Loewenmeyer is disposed to think that attacks of pain of great intensity, occurring in paroxysms, are not likely to be favorably influenced by codein, but are alleviated by morphine. This was particularly noticeable in hepatic colic and in renal colic. He would also consider it a mistake to administer codein in cases of gout or of circumscribed inflammation of the peritoneum, in which large doses of opium act so happily in preventing extension of the inflammatory process. After the acute symptoms have subsided, however, codein is useful in controlling the remaining pains.

Incomparably more favorable than in any affection heretofore mentioned, is the action of codein in diseases of the thoracic viscera, and particularly of the organs of respiration. This was especially notable in cases of phthisis, alike for its influence upon the cough, for relief of pain, and for modifying acute bronchitic or pneumonitic exacerbations. Good results were likewise evident in some cases of bronchial asthma. The drug was also administered in some cases of severe cardiac lesions in which morphine had previously been employed, and without seeming to produce any toxic effect. On the other hand, it was of little avail either in organic or functional nervous affections. As a hypnotic, however, it acted readily, nor did it seem to have a tendency to produce an unfortunate habit, such as follows the continued use of morphine.

While Loewenmeyer cannot agree with the opinion that codein is useful in the direct treatment of the morphine habit, he looks upon it as a prophylactic, inasmuch as by its substitution for morphine the contraction of the habit may be avoided.

We have called attention to this careful study of an important drug, because we believe that in America, too, its use might be profitably increased. Our experience tallies closely with that of Loewenmeyer so far as reported—an important omission in the report being its use in diabetes mellitus—and the concluding observation of that author is one to which great heed should be given. Many unfortunate cases of morphine habit have been due to un-

guarded prescription of the drug, or too long continued resort to it, by physicians. It is much easier to avert contraction of the habit than to cure it. Therefore, if codein be applicable at all in cases where an opium alkaloid is indicated for anything more than occasional use, it should be preferred. We are inclined to go still further than Loewenmeyer and to urge caution and reluctance in the use even of codein for prolonged periods. Let continuous resort to any drug of this nature be only adopted after careful deliberation, as an absolute necessity, and with the safeguard, to both patient and physician, of a consultation.

CORRESPONDENCE.

FIVE CASES OF PTOMAINE POISONING.

To the Editor of THE MEDICAL NEWS,

SIR: I take the liberty of presenting these cases, which to me were of considerable interest, to my colleagues in the medical profession for their consideration. I think that the report may perhaps assist us in finding the etiology of some of those most serious and painful conditions which we so often meet with, and where the cause is somewhat obscure.

I had been practising for some time in the mining regions near Charleston, S. C., a dangerously malarial section, and while there had seen some of the most desperate and malignant forms of malarial affections, such as malignant malarial dysenteries, paralyses, and congestions, and so was not in a condition to be surprised by anything I met with. However, on Monday, in the latter part of April, 1890, I met with a series of five cases which specially attracted my attention after the death of two of them. On the previous Friday evening there had been a beef and a hog killed, the meat of which was sold in the local market on Saturday; it had not been kept on ice, but the weather was pleasant, not hot. My patients ate some of this meat Saturday afternoon and again on Sunday morning—four women and one man. One of the women at about eleven o'clock Sunday morning was taken with apparently a violent attack of cholera morbus, in which condition she remained until I saw her early on Monday morning. Another of the women was attacked in the same way at about 1 o'clock Monday afternoon; she had eaten some of the pork. The other three were attacked in a similar way during Monday.

The meat had appeared to be perfectly fresh and very nice, so that when I inquired as to whether they had eaten anything which might have caused the trouble, they did not mention the meat. The first two women I found in the following condition: Lying with the knees drawn up and suffering great pain, paroxysmal in character, abdomen distended, tympanitic and painful on pressure, countenance anxious, great nervous excitement, temperature 101°, pulse rapid, bowels constipated, no history of a chill or any previous debility. I considered this condition as cholera morbus, although there had been but one slight attack of vomiting and no purging, so I gave a large enema of warm water and soap, thinking that I would clear the bowels of the irritating substance. The enema acted well and brought away large quantities of fæcal matter. I then gave a hypodermic injection of one-half grain of morphine, ordered hot stupes to be applied over the abdomen constantly, and one-quarter grain of morphine to be given every three hours until relieved.

On calling next morning I found that my patients had had little or no relief, and that a dysenteric discharge had set in, temperature 102°, pulse rapid and compressible. Thinking this to be dysentery following cholera morbus I gave ipecacuanha, opium, and bismuth-subnitrate; also quinine, five grains, three times a day. But the condition continued to grow worse and by night my patients were in collapse, and died the next morning (Wednesday).

Of the other three, the man recovered on the above-mentioned treatment, although he went through a troublesome and severe attack of dysentery. On Tuesday it was suggested to me that perhaps the meat was the cause of the trouble, and the idea struck me as being a likely one and suggested ptomaines. I immediately put the other two women on the following treatment: To one, after washing out the lower bowel with solution of bichloride of mercury 1:3000, I gave bichloride of mercury one-sixteenth grain every four hours; she recovered rapidly. To the other I gave tincture of chloride of iron, 20 drops every four hours, also an enema of the bichloride of mercury solution; she recovered, but slowly.

On examining into the histories of these cases I found that all of them had eaten either the pork or the beef. The man's case was milder than the others, which fact, I think, was due to the beef eaten by him having been parboiled before being roasted, which he states was the case. I have also been informed that numbers of others had dysentery after eating meat, on several occasions previous to this. Finding that a considerable amount of distemper existed among the hogs, cows, and horses, I concluded that perhaps, the animals being in an unhealthy condition, putrefactive changes set in rapidly, and, although being only incipient—for the meat seemed fresh—ptomaines were formed, and that my patients were suffering from poisoning from this product.

Now in the section where I have been practising for a year fresh meat could only be had once a week—on Saturday—and I found, on looking over my cases of dysentery for the year—and a great number of them there were—that most of them were in the spring and summer, and that frequently fresh meat had been eaten a day or so before, and that when such was the case the onset of the disease was similar to that of the above-mentioned cases, varying in severity, due sometimes to the mode of cooking and again to the quantity eaten; although there were not many deaths, I must confess my treatment of that disease with ipecacuanha, etc., was not satisfactory.

The theory I wish to endorse is that as dysentery, cholera morbus, cholera infantum, etc., are most common in the summer months, in hot and filthy quarters, and in the tropics, and that as the summer months and warm climates are the conditions most apt to convert albuminoid substances into ptomaines, may not ptomaines,

more frequently than we generally suppose, be the cause of these affections? And that, if such be the case, could not a more satisfactory treatment than the present be formulated? There was a condition in my cases which I failed to make much mention of above, which, I think, goes to strengthen the ptomaine theory. It was the great nervous excitement, which appeared to me to be due to the absorption into the blood of a virulent septic poison; for the local intestinal conditions I did not consider severe enough to cause it; also the collapse I considered due to this cause.

I did not make an autopsy of either of these bodies or examine the discharges chemically, but I feel convinced that they were cases of ptomaine poisoning, and that the above-mentioned diseases are frequently caused by this product.

W. MAZYCK MEMMINGER, M.D.

CHARLESTON, S. C.

NEWS ITEMS.

THE next meeting of the Fifth District Branch of the New York State Medical Association will be the eighth special meeting, to be held in Kingston, Ulster county, New York, on Tuesday, July 22, 1890. A large attendance is desired.

THE 17th annual session of the Mississippi Valley Medical Association will be held at Louisville, Kentucky, October 8, 9, and 10, 1890. The medical profession is respectfully invited to attend. The meeting promises to be of great social and scientific interest, as the profession of Louisville are doing their utmost to make it a success. Ladies accompanying physicians will be made especially welcome. Gentlemen wishing to read papers will please send titles as soon as possible to the secretary, Dr. E. S. McKee, 57 W. Seventh street, Cincinnati. The American Rhinological Association will also meet in Louisville October 6, 7, and 8, 1890.

A Medical Bishop.—The Right Reverend Henry Callaway, Bishop of Saint John's, Caffraria, South Africa, who died March 26th, was a regularly qualified practitioner of medicine and surgery, his M.D. degree having been granted by the King's College, Aberdeen, in 1853. He was in his seventy-third year at the time of his decease.

Dr. Virchow has recently been on a brief visit to Hissarlik, where his old friend Schliemann is still engaged in explorations. On his return, while passing through Constantinople, he was made the recipient of marked attentions by the Medical Society of that city. He addressed the Society in response to remarks by the President, Dr. Stekulis, saying that there was a manifest and happy awakening in many parts of the Orient, of which he himself had been a witness, and the scientific world was destined to be the gainer by the contributions of countries that had hitherto been receivers only, and giving out nothing of value.

Professor Nussbaum Pensioned.—Dr. von Nussbaum, it is announced, will be awarded a pension by his government in consideration of his distinguished services in surgery. He has been invalided on account of a severe attack of influenza, about six months ago, which has left him partially paralyzed and nearly blind.

THE University of Halle now has its Hygienic Institute, with suitable lecture-hall and laboratories. Professor Renk has been appointed to be its director.

Obituary.—The death of Dr. Francesco Scalzi, at Rome, is the subject of memorial mention in the *British Medical Journal.* Professor Scalzi was the most eminent authority in materia medica, in Italy, of his generation. He established, in 1876, the first and the best, in Italy, Institute for Experimental Pharmacology and Toxicology. He was a distinguished lecturer and teacher, an editor, the writer of 112 publications on various subjects, a hospital physician, a sanitarian, and a public official. He was fluent, eloquent, fertile, and withal blessed with a sound judgment. He was in his 70th year.

Large Russian Surgical Fees.—Dr. Sklifissowsky, of Moscow, having been called to Odessa to operate upon a case of hip-disease, was presented with an honorarium of 11,000 roubles, or the value of £1,222. This is, for Russia, an enormous fee, and the surgeon, with remarkable generosity, passed it over untouched to the University of Odessa, to found a medical scholarship. He also was called upon, incidentally to his other consultations, to operate upon a cancer of the breast, for which he received 2000 roubles. These large fees are for the elect only, the average Russian medical man being very poorly paid.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 17 TO JUNE 23, 1890.

By direction of the Secretary of War, leave of absence for six months, to take effect when, in the opinion of his department commander, his services can be spared, is granted WILLIAM O. OWEN, JR., *Captain and Assistant Surgeon.*—Par. 12, *S. O. 139, A. G. O.*, June 14, 1890.

By direction of the Secretary of War, EUGENE L. SWIFT, *First Lieutenant and Assistant Surgeon,* is relieved from duty at Fort Spokane, Washington, and will report in person to the commanding officer at Fort McDowell, Arizona, for duty at that station, relieving Marlborough C. Wyeth, Captain and Assistant Surgeon, who, on being thus relieved, will proceed to Fort McIntosh, Texas, and report in person to the commanding officer thereof for duty at that station. The officers named will also report by letter, upon their arrival at their new stations, to their respective department commanders.—Par. 10, *S. O. 140, A. G. O.*, June 16, 1890.

By direction of the Secretary of War, leave of absence for two months, to take effect July 1, 1890, is granted CHARLES B. BYRNE, *Captain and Assistant Surgeon.*—Par. 13, *S. O. 141, Headquarters of the Army, A. G. O.*, June 17, 1890.

By direction of the Secretary of War, leave of absence for four months, to take effect upon the final abandonment of Fort Maginnis, Mont., is granted to WILLIAM W. GRAY, *Captain and Assistant Surgeon.*—Par. 14, *S. O. 141, Headquarters of the Army, A. G. O.*, June 17, 1890.

By direction of the Secretary of War, SAMUEL M. HORTON, *Major and Surgeon,* will visit the encampment of the Maine Volunteer Militia, at Augusta, Maine, during the period of its encampment, June 30 to July 4, 1890, inclusive, for the purpose of instructing the medical department thereof in its duties in camp, and on the completion of this duty will return to his proper station.—Par. 5, *S. O. 143, Adjutant-General's Office, Washington, D. C.*, June 19, 1890.

TAYLOR, MARCUS E., *Captain and Assistant Surgeon.*—Is hereby granted leave of absence for one month, on surgeon's certificate of disability, with permision to go beyond the limits of this Division, and to apply for an extension of five months.—Par. 1, *S. O. 45, Division of the Pacific, San Francisco, Cal.*, June 13, 1890.

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An Open Letter to the Medical Profession

THE INFANT FOOD PROBLEM SOLVED.

NEW YORK, *May* 1, 1890.

The Annual of the Universal Medical Sciences for 1889 says: *"A perfect Infant Food is still a desideratum; such a food will probably be evolved in the mind of some manufacturer who understands the physiology of infantile digestion and the chemistry of milk. A substitute for human milk to approximate the latter closely should be made entirely from cow's milk, without the addition of any ingredient not derived from milk."*

"But not alone do we demand that these Milk Foods contain the equivalent of the solids in human milk, and especially of the albuminoids derived from milk, but that the latter be gathered with the utmost care from properly fed animals, transported with the least possible jolting to the factory, maintained during its transit at a low temperature, then transferred to an apparatus for sterilization, and immediately after the latter has been accomplished reduced to the dry state, in order to prevent the formation of those organisms which Loeffer, Pasteur, and Lester have found to develop in fluid milk after boiling under an alkaline reaction. If such a preparation be put into air-tight and sterilized jars, all will have been accomplished that can be done to render the food sterile, and thus fulfil the chief indications in the prevention of the most serious gastro-intestinal derangements."

"Such a food, too, would have the advantage of being easily and rapidly prepared by addition of sterilized water, affording an altogether sterilized food."

To the *Medical Profession* at large, we submit for examination and trial the perfected Milk Food known as **LACTO-PREPARATA.** We claim that **LACTO-PREPARATA** is an *ideal Infant Food*, and that it fulfills the above requirements in every particular, except the partial substitution of cocoa-butter for unstable milk-fat. This substitution was made by advice of Prof. Attfield, London, who made extensive tests of its food value and digestibility in the London Hospitals for Infants.

LACTO-PREPARATA is made from cow's milk evaporated in vacuo a few hours after it leaves the udder. In order to have the product correspond in composition with breast-milk, sufficient milk-sugar is added to bring up the carbohydrates and reduce the albuminoids to a proper proportion (17 per cent). The casein is partially predigested (30 per cent), and the remaining portion is rendered like human milk in character and digestibility. The ingredients are perfectly sterilized and placed in hermetically sealed cans; the powdering, bolting, and canning are done in an air-tight room, all air entering and leaving this room is forced by a blower through heavy layers of cotton. **LACTO-PREPARATA** is adapted more especially to infants from birth to six months of age; *and by the addition of water alone represents almost perfectly human milk in taste, composition, and digestibility.*

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PREPARED BY JAMES I. FELLOWS, CHEMIST,

48 VESEY STREET, NEW YORK.

Circulars and Samples sent to Physicians on application.

NOTES ABOUT SOME SEASONABLE REMEDIES FOR PREVALENT SUMMER DISEASES.

Among the diseases that are especially prevalent during the hot weather are the intestinal disturbances: diarrhoea, dysentery, intestinal colic, gastric irritability, etc.

The remedies commended for these affections are manifold, and must necessarily vary with the individual conditions. Simplicity of medicinal treatment in these cases is, we believe, practiced by the most intelligent physicians. As easily available, eligible and convenient remedies, when other than dietetic or hygienic measures are desirable, we may mention the following, supplied by us, which have proved efficient in the experience of many physicians:

Chloranodyne, a preparation of much value as a sedative, anodyne and antispasmodic in disturbances of the digestive tract incident to summer. The formula is an improvement upon the chlorodyne of J. Collis Browne, M.R.C.S.L., which has long been established in favor abroad.

Among intestinal sedatives tablets of bismuth subcarbonate and subnitrate, antacid tablets, soda-mint tablets, Dover powder tablets, pepsin and bismuth tablets, arsenite of copper tablets, and pepsinum purum tablets or pepsin cordial when diarrhœa is dependent on fermentation of undigested food, offer a choice for selection to meet the varying indications present.

Our pepsin cordial presents the ferment in an especially desirable form for administration, being permanent and palatable, as well as possessing in a high degree the proteolytic properties of the gastric juice.

The antiseptic and sedative treatment of intestinal disorders is a deservedly popular one, and in this class of remedies we would remind physicians of the antiseptic yellow oxide of mercury tablets which have proved of so much service in septic forms of dyspepsia, and prophylactic against diarrhoea and dysentery.

For local use mercuric iodide tablets will be found convenient for making solutions of any desired strength, and for purposes of disinfection of excretions, or surroundings, antiseptic liquid or thiocamph may be employed to advantage.

There is another class of remedies, to which we wish to ask especial attention, of much service in inducing emesis in children or adults in which overloading of the stomach or intestines leads to diarrhoea. A most reliable and certain emetic for this condition is normal liquid ipecac (standard two-per-cent. emetine). This is available also in croup incident to the exposure of children to sudden changes of temperature and the out-door life of summer.

For use as an expectorant for coughs and colds, two recent remedies are being largely employed, viz.: cocillana and Goanese ipecac.

Information as to any of these remedies in the form of descriptive circulars and samples for testing when desired, will be furnished to physicians on request.